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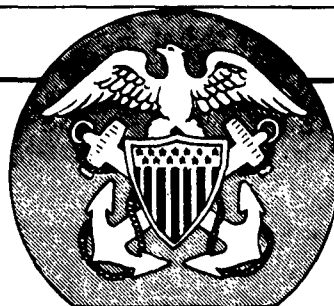


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# NAVAL MEDICAL FIELD RESEARCH LABORATORY

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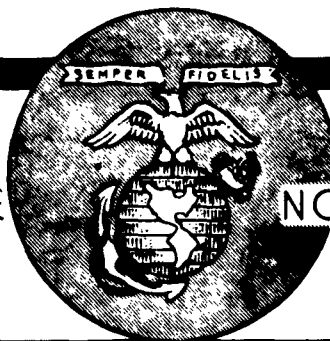
July 1964

## THE RELIABILITY OF AUTOMOBILE ACCIDENT EXPERIENCE IN A MILITARY SAMPLE

by

George H. Malone, Jr., LTJG MSC USNR

Bureau of Medicine and Surgery, Navy Department  
Task MR005.12-2504.1.1



CAMP LEJEUNE

NORTH CAROLINA

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Psychology Division

U. S. NAVAL MEDICAL FIELD RESEARCH LABORATORY  
CAMP LEJEUNE, NORTH CAROLINA

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## SUMMARY PAGE

### THE PROBLEM

To evaluate the temporal stability of automobile accident experience in a sample of U. S. Marines.

### FINDINGS

The automobile accident experience of a sample of 84 enlisted U. S. Marines was analyzed. Accident experience in the preceding 12 months was found to be essentially unrelated to accident experience prior to the above mentioned period.

### APPLICATION

The results of this study will serve to caution investigators who would use automobile accident experience as a criterion of driving behavior in a military sample.

## ADMINISTRATIVE INFORMATION

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## ABSTRACT

Automobile accident histories were obtained from a sample of 84 U. S. Marines stationed at Camp Lejeune, North Carolina. The number of accidents in the preceding 12 months yielded a correlation of zero with accidents prior to that 12-month period. It was concluded that prior accident experience does not yield a reliable measure of automobile driving behavior in U. S. Marines.

## The Reliability of Automobile Accident Experience in a Military Sample

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### INTRODUCTION

One of the major problems in the field of automobile driving research is the definition of a criterion measure of safe driving. Accident experience has frequently been chosen to serve as the criterion of safe driving (1). This is an appealing choice since it is accidents that directly cause injury, death, and property damage. The literature, however, indicates that a person's accident experience in one year is only slightly related to his accident experience in other years. In simple terms, accident experience does not appear to be reliable over time. Goldstein (2) reports that two studies of the accident experience of automobile drivers found  $r$ 's of .11 and .18 when accidents in two different time periods were compared.

The present study was conducted to determine whether accident experience in a relatively homogeneous military sample would exhibit greater reliability over time than that found in other less restricted populations (2).

### METHOD

Information about accident experience was gathered by means of a biographical data sheet. Subjects were assured of anonymity of response and were further assured that their responses would not affect their military standing in any way. It was assumed that accident information gathered by the biographical method under these conditions would yield valid information concerning prior accident experience.

Official accident reports were not used for the following reasons:

1. Accident files at Camp Lejeune do not contain records of accidents that occurred out-of-state without hospitalization of military personnel.
2. The present study involved time periods when the subjects were not stationed at Camp Lejeune and/or were not in the military service. For these time periods, no accident records would be locally available.

## SUBJECTS

The 84 subjects employed in this study were enlisted male U. S. Marines drawn from Fleet Marine Force and Marine Corps Base personnel stationed at Camp Lejeune, North Carolina. All subjects held a valid state driver's license. Their mean age was 22.8 years. Twenty-three of the subjects were married, while 61 were single. Eighty-six per cent of the subjects had completed from 10 to 12 years of school. The subjects had been driving from 2 to 20 years, with a mean of 4.3 years driven.

## PROCEDURE

The subjects were assembled in small groups (N of 25 or less) and the purpose of the study was briefly explained. The subjects were assured that the information they supplied on the biographical data sheets would be held in confidence. After the subjects had completed the biographical data sheets, they took several psychological tests. Following testing, the men were returned to their own military units.

## RESULTS

For each subject, the number of accidents in the preceding 12 months was compared to his accident experience prior to that time. The results of this comparison are presented in Table 1.

The coefficient of correlation between accidents in the preceding 12 months and accidents prior to that time is  $-.01$ .

## DISCUSSION

The results of this study indicate that accident experience among enlisted military personnel is not statistically reliable over time. In this respect, enlisted U. S. Marines are quite similar to the Connecticut drivers studied by Forbes (3) and a general sample of drivers studied by Bransford (4).



Table 1

Cross-Classification of 84 U. S. Marines in Terms of Number of  
Accidents in the Preceding 12 Months and Number of  
Accidents Prior to That Time

		No. Accidents in Preceding 12 Months					
		0	1	2	3	4	
Prior No. Accidents	0	44	3	3	-	-	50
	1	15	2	-	-	-	17
	2	7	-	-	-	-	7
	3	6	2	-	-	-	8
	4	2	-	-	-	-	2
		74	7	3	0	0	84

## CONCLUSIONS

The results of the present study serve as a caution concerning the use of accident experience as a criterion of driving behavior in a military population. From these results and those obtained by Forbes (3) and Bransford (4), it would seem to be incumbent upon an investigator using accident experience as a criterion measure to demonstrate a reasonable reliability of that criterion in the group being studied.

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